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10/791,559

03/03/2004

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12/05/2006

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EXAMINER

LE, HOA VAN

ART UNIT

PAPER NUMBER

1752

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/791,559

Applicant(s)

YASUNAMI ET AL.

Examiner

Hoa V. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-4 and 6-11 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

This is in response to Paper filed on 23 October 2006.

I. The finality of the Office action mailed on 21 July 2006 is withdrawn as requested.

II. The record shows that on 10 May 2005, applicants elect resins A1-2 on page 27, A2-5 on page 33 and monomer being read on formula (4) as a part in resin A1-33 on page 31 of the specification. The elected resins and monomer have been considered and searched. The consideration and search are extended to the applied species. Others have not been considered, searched or examined until all of the elected and applied species are overcome.

III. Claims 1-4 and 6-11 with respect the elected and applied species are rejected under 35 U.S.C. 103(a) as being unpatentable over Uenishi et al (6,489,080) considered in view of Ishihara et al (2004/0033434).

Uenishi et al disclose, teach and suggest a positive resist composition comprising a resin being read the general structure of formula (1) of c(25 and 36),

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a resin being read the general structure formula (2) of c(1-10, 14-17, 21-23, 25-37) on columns 37-44, up to 20 wt% of a compound of generating sulfonic acid up on irradiation with active rays or radiation (col.19, lines 7-12) represented by compounds I(1-14), II(1-5) and III(1-8) on columns 11-18, PAG3(5, 9, 14, 20-27), PGA4(5-11, 13, 15, 17-22, 28, 31-34) on columns 24-31, a nitrogen containing base on column 65, line 21 to column 66, line 37, fluorine/silicon surfactants on column 67, lines 26-35. One or more other types of photo-acid generators are taught and suggested to be used with the sulfonic acid generator in a ratio of 100/0 to 40/60 sulfonic acid generator to other type of acid generator on column 18, line 58 to column 19, line 8. The language "a group that is not decomposed by the action of an acid" or the like is a functional property of a material and considered inherent. For a patentability of a functional property of a material, it is allowed by law to request and require applicants to provide a convincing evidence to the contrary since arguments alone are not a factual evidence in accordance with the authority stated in *In re Schreiber*, 44 USPQ2d 1429.

Uenishi et al do not specify other carboxylic acid generations upon irradiation with active rays or radiation. Ishihara et al at paragraphs 0054 and 0072 are cited to show the known use of the claimed compound for providing a

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carboxylic acid generating compound in order to reduce a solubility of a resin in formulation a positive resist composition on paragraph 0075.

Since the above references are all related to positive resist compositions, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include an additional compound capable of generating a carboxylic acid upon irradiation with active rays or radiation in Uenishi et al positive resist compositions for a reasonable expectation of further reducing a solubility of the resin when the positive resist composition is exposed to the irradiation as disclosed, taught, suggest and obtained in Ishihara et al.

Applicant's arguments filed 23 October 2006 have been fully considered but they are not persuasive.

Applicants urge that each of the references individually do not disclose, teach and suggest all of the claimed embodiments. The record shows that the above rejection on the record is based on the combined teachings and suggestions of the combined references.

Each of all and all evidences under Rule 132 on the record has been considered.

First of all, it has been looking for and examining a criticality or unusual or unexpected result of a claimed (chemical composition) material, per se, since the claims are related to a (chemical composition) material but not a method or process of using.

Secondary, it is looking for and examined each of all and all processing steps and processing conditions to obtain the results since the instant claims are not directly related to the results. Therefore, each of all and all of the processing steps and processing conditions must be carefully considered since the (chemical composition) material indirectly based on the tested results for their patentability but not directly based on the (chemical composition) material, per se, as claimed. Therefore, an allowed claim or patent would have no value when someone shows that any broadly embodiment is not provided as shown for using any processing steps and/or processing conditions since the claims are limited to each and all processing steps and processing conditions of a product-by-process of use claims. The arguments alone are not a factual evidence. Applicants should convincingly show an evidence to the contrary for the record for the patentability of the claims. It would like to see results using

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(1) about 5 wt% of a compound capable of generating sulfonic acid upon irradiation and about 94 wt% of a compound capable of generating a carboxylic acid upon irradiation and

(2) about 20 wt% of a compound capable of generating sulfonic acid upon irradiation and about 79 wt% of a compound capable of generating a carboxylic acid upon irradiation as broadly claimed in any processing step and condition.

The record shows that the tested "Resin I" is not the instantly claimed resin and is not applied or suggested on the record. The showings are improper because applicants fail to test to the closest applied resin on the record.

IV. Claims 1-4 and 6-11 with respect to the elected and applied species are rejected under 35 U.S.C. 102(a) as being anticipated by, , in the alternative, under 35 U.S.C. 103(a) as obvious over Ishihara et al (2004/0033434).

Ishihara et al disclose and teach a positive resist composition comprising a resin being read on the resins of the A1 with resins of the formula [11] with  $R^{(12,13)}$  and  $^{14)}$  being hydrogen...,  $R^{(16)}$  being hydrogen...,  $R^{(17)}$  being an alkyl,  $R^{(18)}$  being aralkyl...,  $R^{(19)}$  being a hydrogen...and with r, t and e being natural numbers, a resin being read on the resins of the A2 with resins of the formula [11] with  $R^{(11,12)}$

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and <sup>14)</sup> being hydrogen...,  $R^{(16)}$  being hydrogen...,  $R^{(17)}$  being an alkyl,  $R^{(18)}$  being an alkyl...,  $R^{(19)}$  being a hydrogen...and with r, t and e being natural numbers on paragraphs 0078 to 0082, 0085 and 0087-0088, formula [12] with  $R^{(12,13,14,16,17, 18 \text{ and } 19)}$  being the same as those in formula [11] and with r', t' and e' being natural numbers on paragraphs 0091-0093, 0.05 to 5 wt% of a compound of generating sulfonic acid up on irradiation with active rays or radiation on paragraphs 0065-0070 and 0072, 0087-0088, a nitrogen containing base on paragraph 0114, fluorine/silicon surfactants on paragraph 0117 and from 1-19 wt% of compound capable of generating a carboxylic acid upon irradiation with active rays or radiation on paragraphs 0054 and 0072. Each and all functional embodiments in the claims, including those in claims 1, 3, 6 and 7 as specifically made the arguments by applicants have been reasonably considered inherent in the absence of a convincing evidence to the contrary in accordance with the authority stated in *In re Schreiber*, 44 USPQ2d 1429. Resin I is not the instantly claimed resin. Therefore, it is not applied or suggested. Since Ishihara et al disclose and teach the claimed embodiments, the above claims are found to be anticipated by Ishihara et al.

In an alternative, the teachings and suggestions are not in an example, are reasonably found to be rendered prima facie obvious by Ishihara et al.



Applicant's arguments filed 23 October 2006 have been fully considered but they are not persuasive.

Applicants urge that there is no working example in Ishihara et al having all of the claimed embodiments. Usable embodiments in an applied reference are not to any specific working examples. Should the instant claims are limited to or narrowly read on each of all and all chemical ingredients, their amounts, processing steps and processing conditions in each and all examples in the instant application in order for the arguments to have some merits?

Applicants urge that the rejection is based on a hindsight construction. It is submitted that the rejection is not based on impermissible use of hindsight because it does not depend on any information that can be gleaned only from applicants' specification in accordance with the authority stated in *In re McLaughlin*, 170 USPQ 209.

Applicants recognize that  $t$  or others of the like substitutions in the applied formulas [11] and [12] can be a positive number. The record shows that  $t$  is zero or the like is not applied or suggested.

Applicants urge that there is no working example in Ishihara et al having the instantly claimed resin. Usable resin embodiments in an applied reference are not

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to any specific working examples. Should the instant claims are limited to or narrowly read on each of all and all chemical ingredients, their amounts, processing steps and processing conditions in each and all examples in the instant application in order for the arguments to have some merits?

The record shows that the tested "Resin I" is not the instantly claimed resin and is not applied or suggested on the record.

The showings are improper because applicants fail to test to the closet applied resin on the record.

Applicants recognized that the tested "Resin I" is not the instantly claimed resin on page 9, second paragraph and not applied or suggested on the record. It should not be used for testing. The closet applied resin on the record should be used for testing instead. Therefore, the tests are improper, have and are given little value.

V. Claims 1-4 and 6-11 with respect to the elected and applied species are rejected under 35 U.S.C. 103(a) as obvious over Ishihara et al (2004/0033434) considered in view of Uenishi et al (6,489,080)

Ishihara et al disclose, teach and suggest a positive resist composition comprising a resin being read on the resins of the A1 with resins of the formula

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[11] with  $R^{(12,13 \text{ and } 14)}$  being hydrogen...,  $R^{(16)}$  being hydrogen...,  $R^{(17)}$  being an alkyl,  $R^{(18)}$  being an alkyl...,  $R^{(19)}$  being a hydrogen...and with r, t and e being natural numbers, a resin being read on the resins of the A2 with resins of the formula [11] with  $R^{(11,12 \text{ and } 14)}$  being hydrogen...,  $R^{(16)}$  being hydrogen...,  $R^{(17)}$  being an alkyl,  $R^{(18)}$  being an alkyl...,  $R^{(19)}$  being a hydrogen...and with r, t and e being natural numbers on paragraphs 0078 to 0082, 0085 and 0087-0088, formula [12] with  $R^{(12,13,14,16,17, 18 \text{ and } 19)}$  being the same as those in formula [11] and with r', t' and e' being natural numbers on paragraphs 0091-0093, 0.05 to 5 wt% of a compound of generating sulfonic acid up on irradiation with active rays or radiation on paragraphs 0065-0070 and 0072, 0087-0088, a nitrogen containing base on paragraph 0114, fluorine/silicon surfactants on paragraph 0117 and from 1-19 wt% of compound capable of generating a carboxylic acid upon irradiation with active rays or radiation on paragraphs 0054 and 0072. Each and all functional embodiments in the claims, including those in claims 1, 3, 6 and 7 as specifically made the arguments by applicants have been reasonably considered inherent in the absence of a convincing evidence to the contrary in accordance with the authority stated in *In re Schreiber*, 44 USPQ2d 1429. Resin I is not the instantly claimed resin. Therefore, it is not applied or suggested.

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Ishihara et al disclose, teach and suggest the claimed resins for obtaining high image resolutions on paragraph 0193 but are not in specific details. However, it is known in the art to obtain and use the claimed resins in more details for the same or about the same photoresist high image resolution. Evidence can be seen in Uenishi et al at col.1:60-64 and resins being read the general structure of formula (1) of c(25 and 36), a resin being read the general structure formula (2) of c(1-10, 14-17, 21-23, 25-37) on columns 37-44.

Since the above references are all related to positive photoresist compositions, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use or cite the known resins for a reasonable expectation of obtaining high image resolution as disclosed, taught and suggested in Uenishi et al.

Applicant's arguments filed 23 October 2006 have been fully considered but they are not persuasive.

It is correct that the above rejection is based on the combined teachings and suggestions of the combined references, especially the use of the secondary reference with respect to Uenishi et al for the teachings and suggestions of the resin being read in the instantly claimed resins as recognized by applicants.

Applicants point out that Ishihara et al at paragraph 0193 shows “a pattern with higher sensitivity, higher resolution, more rectangular sharp and smaller edge roughness” with the use of the selected sulfonium salt photo-acid generator.

However, applicants fail to recognize that Ishihara et al also disclose, teach and suggest the instantly claimed resin for use together with the sulfonium salt photo-acid generator to obtain the result of “a pattern with higher sensitivity, higher resolution, more rectangular sharp and smaller edge roughness”.

Applicants urge that the rejection is based on a substitution. The record shows that the rejection is based on the combined teachings and suggestions of the teachings of the references with the primary reference with respect to Ishihara et al resin in general and the secondary reference with respect to Uenishi et al resin in detail as that of the instant claims.

Applicants urge that the rejection is based on a hindsight construction. It is submitted that the rejection is not based on impermissible use of hindsight because it does not depend on any information that can be gleaned only from applicants' specification in accordance with the authority stated in *In re McLaughlin*, 170 USPQ 209.

Each of all and all evidences under Rule 132 on the record has been considered.

First of all, it has been looking for and examining a criticality or unusual or unexpected result of a claimed (chemical composition) material, per se, since the claims are related to a (chemical composition) material but not a method or process of using.

Secondary, it is looking for and examined each of all and all processing steps and processing conditions to obtain the results since the instant claims are not directly related to the results. Therefore, each of all and all of the processing steps and processing conditions must be carefully considered since the (chemical composition) material indirectly based on the tested results for their patentability but not directly based on the (chemical composition) material, per se, as claimed. Therefore, an allowed claim or patent would have no value when someone shows that any broadly embodiment is not provided as shown for using any processing steps and/or processing conditions since the claims are limited to each and all processing steps and processing conditions of a product-by-process of use claims.

The record shows that the tested "Resin I" is not the instantly claimed resin and is not applied or suggested on the record. The showings are improper because applicants fail to test to the closet applied resin on the record.

Applicants recognized that the tested "Resin I" is not the instantly claimed resin on page 9, second paragraph and not applied or suggested on the record. It

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should not be used for testing. The closet applied resin on the record should be used for testing instead. Therefore, the tests are improper, have and are given little value.

VI. There has been on the record that Urano et al (5,976,759 and 6,656,660) and Sasaki et al (6,727,040) have about the same teachings as those applied above. The are cumulative but may be later applied when a claim is amended. English language machine translations of JP 2002-131898 and JP 2002-341538 are appeared to have about the same teachings and suggestions as those applied above. Kanna et al (2001/0055726 and 2201/0033993), Kodama et al (2001/0041300 now 6,485,883) and Sato et al (5,981,140) are also have about the same teachings and suggestions as those in the applied references on the record and are cumulative but may later applied when an amendment is made.

VII. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the

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advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

VIII. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa V. Le whose telephone number is 571-272-1332. The examiner can normally be reached from 6:30 AM to 4:30 PM on Monday through Thursday and about the same time of most Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on 571-272-1526.

Applicants may file a paper by (1) fax with a central facsimile receiving number 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see



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<http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hoa V. Le  
Primary Examiner  
Art Unit 1752

HVL  
30 November 2006.

HOA VAN LE  
PRIMARY EXAMINER

A handwritten signature in black ink that reads "Hoa Van Le". The signature is written in a cursive, flowing style. The first name "Hoa" is followed by "Van" and then "Le". There is a small mark above the "u" in "Van".